

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-24 are presently active in this case. The present Amendment amends Claims 1-5; and adds Claims 6-24.

The outstanding Office Action rejected Claims 1-2 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Havard et al. (U.S. Patent No. 5,483,034) in view of Banas et al. (U.S. Patent No. 4,691,093). Claims 3-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Havard et al. and Banas et al. in view of Altenburg et al. (German Patent No. 193-21-892).

In order to vary the scope of protection recited in the claims, new Claims 6-24 are added. New Claims 6-24 find non-limiting support in the disclosure as originally filed, for example in Claims 1-5, at pages 4-6 and in Figs. 2-5. Therefore, the changes to the claims are not believed to raise a question of new matter.<sup>1</sup>

In response to the rejections of Claims 1-5 under 35 U.S.C. § 103(a), Applicant respectfully requests reconsideration of these rejections and traverses the rejections, as discussed next.

Briefly recapitulating, Applicant's invention, as recited in Claim 1, relates to a laser welding method for the assembly of parts arranged in the shape of a T. The assembly includes a stem plate with parallel surfaces. The method includes a step of laser welding the assembly by two welds made *at the same time* and with *welding axes parallel to each other*. The laser welding step is performed such that *each of the two welding axes is tangent to one of the surfaces* of the stem plate.

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<sup>1</sup> See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

As explained in Applicant's specification at page 6, lines 16-20 Applicant's invention improves upon conventional welding methods because the welding can be performed with a single pass without the need for filler wire, and the risk of deforming the assembly during welding is reduced.

Turning now to the applied prior art, the Havard et al. patent discloses a laser welding method for a T assembly. In the Havard et al. method, welding takes place according to two laser axes 8A,8B, which are inclined with respect to one another and intersect at the upper surface 1B of the plate 1. These two axes 8A and 8B form an X with a centre placed in the upper part of the plate 1. The two welding axes 8A,8B traverse the plate 1 and the corners 2C of the partition 2. As a result of the two X-inclined welds, there is an overall welding of the plate 1 to the partition 2.<sup>2</sup> The Havard et al. patent thus fails to teach a step of laser welding the assembly by two welds with *welding axes parallel to each other*, as required by Applicant's Claim 1. The Havard et al. patent also fails to teach a laser welding step performed such that *each of the two welding axes is tangent to one of the surfaces* of the stem plate, as required by Applicant's Claim 1. On the contrary, the Havard et al. patent teaches away from the parallel laser welding axes tangent to the surfaces of the stem plate. Indeed, the Havard et al. patent explicitly teaches X-inclined weld axes.

The outstanding Office Action rejects Applicant's Claims 1-5 based on the proposition that the Banas et al. patent discloses the above features,<sup>3</sup> and that it would have been obvious to modify the Havard et al. method by using parallel laser spots, as taught by the Banas et al. patent to arrive at Applicant's claimed invention. Applicant respectfully submits, however, that the Banas et al. patent fails to disclose the claimed laser welding step to make two welds *at the same time* and performed such that *each of the two welding axes is tangent to one of the surfaces* of the stem plate, as claimed.

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<sup>2</sup> The Havard et al. patent at column 3, lines 9-25.

<sup>3</sup> See outstanding Office Action from page 2, last paragraph.

The Banas et al. patent discloses a laser welding that provides a common weld pool formed by the laser spots transverse to the weld seam. In the Banas et al. method, the twin parallel spot laser welding is used to improve the quality of only *one weld between two pieces*. In contrast to the claimed method, in the Banas et al. method, the two laser spots do not simultaneously weld two faces of a first part on a second part. Further, the Banas et al. patent does not teach or suggest directing the two parallel laser beams so as to be tangent to faces being welded. Thus, the Banas et al. patent fails to disclose making *two welds at the same time* such that *the two laser welding axes are tangent to the surfaces* of a plate of one of two parts to be welded together. Therefore, even if the combination of the Havard et al. and Banas et al. patents is assumed to be proper, the combination fails to teach or suggest every element of the claimed invention. Specifically, the combination fails to teach the claimed laser welding step used to make *two welds at the same time* and performed such that *each of the two welding axes is tangent to one of the surfaces* of the stem plate.

Considering the Havard et al. and Banas et al. patents, a person of ordinary skill in the art could use a first laser welding step with Banas et al.'s two parallel laser beams to weld the first face of Havard et al.'s stem plate to Havard et al.'s partition 2, and a second laser welding step with Banas et al.'s two parallel laser beams to weld the second face of Havard et al.'s stem plate to Havard et al.'s partition 2. These two laser welding steps would be successive and inclined with respect to the two faces of the stem plate. Nothing in the prior art, including the Havard et al., Banas et al., and Altenburg et al. patents would suggest to perform these two steps at the same time with *each of the two welding axes being tangent to one of the surfaces* of the stem plate. Further, in order to arrive at Applicant's invention, the person of ordinary skill in the art would have to disregard the explicit teachings of the Havard et al. patent that the two laser axes should be inclined with respect to one another and intersect at the upper surface of the plate 1 so as to form an X with a centre placed in the

upper part of the plate, which provides the overall welding of the plate 1 to the partition 2.<sup>4</sup>

Such modification would change the basic principle of operation of the Havard et al. method. There is no evidence that a person of ordinary skill in the art would be motivated to perform such changes and redesign.<sup>5</sup> Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejection of Claims 1-5 based on these patents.<sup>6</sup>

The position that the Havard et al. method *can* be modified to arrive at the claimed method is insufficient to establish a *prima facie* case of obviousness.<sup>7</sup> Absent improper hindsight reconstruction,<sup>8</sup> a person of ordinary skill in the art would not be motivated to perform such a modification, and Claims 1-5 are believed to be non-obvious and patentable over the applied prior art.

New independent Claim 6 recites a step of directing a first beam so as to produce a first weld between a first surface of a first part and a second part, and simultaneously directing a parallel second beam so as to produce a second weld between a second surface of the first part (opposite the first surface) and the second part. For reasons similar to the one discussed above in relation to Claim 1, the prior art fails to teach or suggest every element of the claimed invention recited in Claim 6.

New Claims 7-24 depend from Claim 6 and recite other features, including for example the first and second beams being separated from each other by a distance equal to

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<sup>4</sup> The Havard et al. patent at column 3, lines 9-25.

<sup>5</sup> See In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (reversing an obviousness rejection where the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.")

<sup>6</sup> See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

<sup>7</sup> See MPEP 2143.01 stating that the "fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness"; see also same section stating "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so,'" (citation omitted).

<sup>8</sup> See MPEP 2141, stating, as one of the tenets of patent law applying to 35 USC 103, that "[t]he references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention."

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the thickness of the plate of the first part (Claim 16); the first beam being tangent to the first surface and the second beam being tangent to the second surface (Claim 17); the first and second beams being perpendicular to a surface of the second part (Claim 18); the first beam being parallel to the first surface and the second beam being parallel to the second surface (Claim 21); the first part including tabs and the second part including slots, each slot having a length and a thickness corresponding to a length and a thickness of a tab (Claim 22); each of the tabs having a height greater than a thickness of the second part (Claim 23); and the second part including two plates placed perpendicular to and in contact with the plate of the first part (Claim 24). The prior art fails to teach or suggest these features in combination with the other features of independent Claim 6. Accordingly, Claims 6-24 are believed to be non-obvious and patentable over the applied prior art.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-24 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

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